



Bank Note Validator mFlash4.x configuration and Programming software guide (Service centre version).

Table of Contents

1. Requirements	Page 2
2. Setup	Page 2
3. Programming	Page 3
4. Configuration	Page 4
5. Configuration tab	Page 5
6. Configuration control Menu	Page 5
7. Service center advanced options	Page 6
8. Pulse interface options	Page 7
9. Parallel and Parallel binary	Page 8
10. Serial 600 Baud and RS232/USB	Page 8
11. MDB/NAMA	Page 9

Requirements

Standalone PC running Windows 98 and higher, serial port or USB to serial converter and 12Volt power source.

Setup.

Attach the serial cable to the PC. If the PC has multiple Serial ports or a USB serial converter, note down the serial port number, in the case of the converter, it may be necessary to refer to the documentation that accompanies it. Next, run the mFlash installer and follow the on screen instructions. Once complete the mFlash program will run, communications will default to Com 1, in most cases this will be correct and will need no adjustment. If necessary go to the Communication drop down and select the correct port from the list.

Next attached a powered up Matrix. You will see the screen change from disconnected (picture P1) to connected (picture P2)

P1

The screenshot displays the mFlash 4.5 software interface. At the top left, the text reads "mFlash 4.5" in a large, bold, black font, with "MATRIX and VECTOR" in a smaller, red font below it. To the right is the VTI logo, which consists of the letters "VTI" in a blue, stylized font with a wavy line underneath. Below the title bar is a "Load HEX file" button and a corresponding text input field. The main interface is divided into two panels. The left panel has a blue header with the text "Click to load Software". Below the header are four input fields labeled "MACHINE", "COUNTRY", "SOFTWARE", and "VERSION", each with a corresponding "CHECKSUM" field below it. The right panel has a blue header with the text "DISCONNECTED". Below the header are four input fields labeled "MACHINE", "COUNTRY", "SOFTWARE", and "SERIAL NO.", each with a corresponding "CHECKSUM" field below it. A red button labeled "UPDATE FIRMWARE" is positioned between the two panels, with a green arrow pointing from the left panel to the right panel. At the bottom of the interface is a "STATUS WINDOW" with a "CHECKSUM" label and a corresponding text input field.

mFlash 4.5

MATRIX and VECTOR



Load HEX file

C:\KWD05T20LA04.HEX

SOFTWARE LOADED

MACHINE	MATRIX
COUNTRY	KUWAIT
SOFTWARE	KWD05T20
VERSION	LA04
CHECKSUM	7E59

UPDATE
FIRMWARE

→

HARDWARE FOUND

MACHINE	MATRIX
COUNTRY	EURO
SOFTWARE	EUR5T20
VERSION	LA02
SERIAL NO.	M3060217

STATUS WINDOW

CHECKSUM

Open Configuration Panel

The Hardware Found pane shows;

1. Machine = Validator type
2. Country
3. Validation software and denomination range
4. Version = Firmware version (first 2 digits) Validation code (digits 3 and 4)
5. Serial number of the connected unit.

Programming

1. Click on Load HEX file and browse to the location of the software file you wish to program into the validator.
2. When loaded the Software loaded pane will show the Country etc.
3. Click update firmware
4. Status window will show the progress of the programming procedure and will confirm completion.
5. If any errors occur, check power and diagnostic cables and retry.

Configuration

When the open configuration panel button is clicked (see P2), extra options appear (P3 and P4)

P3

The screenshot shows a configuration window with a title bar containing 'Configuration' and 'More Option'. The main area is divided into several sections:

- Pull Back Detection:** A dropdown menu set to 'MED Security'.
- Alarm Signal:** A dropdown menu set to 'Active Low'.
- Alarm Signal Diagram:** A graph showing a pulse signal that drops from a high state to a low state and then returns to high.
- Pulse Assignment:** A section with a blue background containing the text: 'Set No. of Pulse(s) for each note channel (Range 0 to 255) This No. will be multiplied by "Pulse Per Dollar" to give total credit pulses.' Below this text is a grid of input fields for note channels 1 through 11.

1	1	5	50	9	0
2	5	6	100	10	0
3	10	7	0	11	0
4	20	8	0		

At the bottom of the panel are two buttons: 'Default Values' and 'Close Configuration Panel'.

P4

The screenshot shows a 'Configuration Control Menu' with the following elements:

- Apply to Device:** A red arrow pointing right towards a device icon.
- Retrieve from Device:** A red arrow pointing left from a device icon.
- Save Config to Disk:** A green button.
- Load Config from Disk:** A blue button.
- Tech ID:** A grey button.

Configuration Tab

1. The first drop down allows the selection of Interface type, this selection will govern which drop downs appear directly below it.
2. If pulse is selected, drop downs available are enable logic (high, low or always enabled) pulse multiplier (pulses per dollar), and pulse speed (fast or slow)
3. For Parallel only output logic (high or low) is available
4. There are no further options on this section for the remaining interfaces.
5. Channel security allows the user to select high or low security modes for each denomination. Refer to VTI for channel listing if unsure.
6. Check boxes all the user to enable and disable each denomination. Refer to VTI for channel listing if unsure.
7. Default values loads default values into the drop downs and check boxes. This does not affect the connected validator unless apply to device is clicked.
8. Close config panel closes back down to programming interface only.

Configuration control menu

1. Apply to device uploads any changes made to the configuration panel options.
2. Retrieve from device loads the current validator settings.
3. Save Config to disk allows the user to save their standard configuration and retrieve it at a later date.
4. Load Config from Disk allows user to retrieve previously saved settings and load them into the configuration panel.
5. Tech ID allows input of code for enabling of Advanced options (more options in beta).

Service center Advanced options

Click Tech id button and input code. Given separately to this manual.

Extra options will be available depending on the interface selected under the Advanced options tab (more options beta version)

Rest of page left blank intentionally.

Pulse Interface options

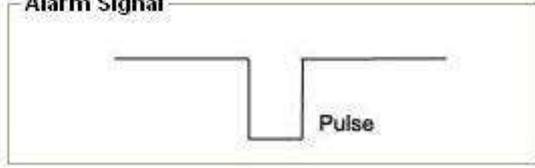
P5

Configuration | **Advanced Options**



Pull Back Detection: Alarm Signal:

Alarm Signal



Pulse

Pulse Assignment

Set No. of Pulse(s) for each note channel (Range 0 to 255) This No. will be multiplied by "Pulse Per Dollar" to give total credit pulses.

1	<input type="text" value="1"/>	6	<input type="text" value="100"/>	11	<input type="text" value="0"/>	16	<input type="text" value="0"/>
2	<input type="text" value="5"/>	7	<input type="text" value="0"/>	12	<input type="text" value="0"/>	17	<input type="text" value="0"/>
3	<input type="text" value="10"/>	8	<input type="text" value="0"/>	13	<input type="text" value="0"/>	18	<input type="text" value="0"/>
4	<input type="text" value="20"/>	9	<input type="text" value="0"/>	14	<input type="text" value="0"/>	19	<input type="text" value="0"/>
5	<input type="text" value="50"/>	10	<input type="text" value="0"/>	15	<input type="text" value="0"/>	20	<input type="text" value="0"/>

1. Pull back detection allows the user to change the security level of the on board Antistringing device. (default is Medium in Matrix and High in Vector)
2. Alarm signal setting allows the user to change the output logic for the alarm (high or low)
3. Pulse assignment allows the user to assign custom pulse values to the validator. As standard this would be set to the Highest value that all denominations are divisible by. i.e. For Euro this is 5 so the values would €5 = 1 Pulse, €10 = 2 Pulses, €20 = 4 Pulses etc.

Parallel and Parallel binary options

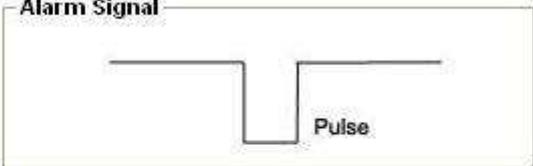
P6

Configuration **Advanced Options**



Pull Back Detection: Alarm Signal:

Alarm Signal



Output Channel Assignment

Assign each Note Channel to Output channel according to VMC setup.

1	<input type="text" value="1"/>	6	<input type="text" value="6"/>	11	<input type="text" value="11"/>	16	<input type="text" value="0"/>
2	<input type="text" value="2"/>	7	<input type="text" value="7"/>	12	<input type="text" value="0"/>	17	<input type="text" value="0"/>
3	<input type="text" value="3"/>	8	<input type="text" value="8"/>	13	<input type="text" value="0"/>	18	<input type="text" value="0"/>
4	<input type="text" value="4"/>	9	<input type="text" value="9"/>	14	<input type="text" value="0"/>	19	<input type="text" value="0"/>
5	<input type="text" value="5"/>	10	<input type="text" value="10"/>	15	<input type="text" value="0"/>	20	<input type="text" value="0"/>

1. First 2 options as per Pulse interface
2. Output channel assignment allows the end user to customise the output channel of each denomination. Please refer to VTI for denomination listing before changing these values.

Serial 600 Baud and RS232/USB options

Serial 600 baud and RS232/USB are as per Parallel without the alarm logic option.

MDB/NAMA options

P7

Configuration **Advanced Options**

Pull Back Detection
MED Security

MDB Advance Setup

ISO Code	Scaling Factor	Decimal Place
0001	100	2

MDB Base Value

Enter Base Value for each output channel (Range 0 to 255).
This value will be used along with "Scaling Factor and
"Decimal Place"

1	1	5	50	9	0	13	0
2	5	6	100	10	0	14	0
3	10	7	0	11	0	15	0
4	20	8	0	12	0	16	0

Default Values **Close Configuration Panel**

1. Pull back detection allows the user to change the security level of the on board Antistringing device. (default is Medium)
2. ISO code Allows the end user to input the country's ISO code identifier or IDD code. For full details consult the MDB/NAMA specifications.
3. The scaling factor allows adjustment of the Base value multiplier (max 1000).
4. Decimal place allows the user to specify the number of decimal points to be displayed (0 or 2).
5. MDB base value is typically the denomination value. In some cases this is not possible due to the high denomination value, please refer to VTI if unsure of these settings.

P8

Configuration | **Advanced Options**

Select Interface:

Battery Version

Wake up by VMC: Option1 Wake up by Note Insertion: Option2

Power OFF after sec (range from 1 to 255)

Channel Security
Set Acceptance Priority / Security Priority for individual MEMORY Channels

L = Acceptance Priority
H = Security Priority

1 L	4 L	7 L	10 L	13 L	16 L	19 L
2 L	5 L	8 L	11 L	14 L	17 L	20 L
3 L	6 L	9 L	12 L	15 L	18 L	

Check Boxes to Enable Bills
Enable / Disable notes in MEMORY Channels
Refer to VTIL doc. for proper setup

<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 7	<input checked="" type="checkbox"/> 10	<input type="checkbox"/> 13	<input type="checkbox"/> 16	<input type="checkbox"/> 19
<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 5	<input checked="" type="checkbox"/> 8	<input checked="" type="checkbox"/> 11	<input type="checkbox"/> 14	<input type="checkbox"/> 17	<input type="checkbox"/> 20
<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 9	<input checked="" type="checkbox"/> 12	<input type="checkbox"/> 15	<input type="checkbox"/> 18	

Other Options available on the main page when set to MDB operation are the two battery modes.

Both require dedicated hardware, a module and harness in the case of the Wake up by VMC type and also a dedicated faceplate in the case of the Wake up by note insertion type. For further details please contact VTI.